

IV. REMARKS

1. Claims 1 and 35 are amended.

2. Claims 1, 3, 7, 11-16, 22, 24, 27 and 31-35 are not anticipated by Hirama under 35 U.S.C. §102(b), and claims 2, 6, 8-10, 17-21, 23, 25, 26, 28-34 and 36,39 are not unpatentable over Hirama under 35 U.S.C. §103(a).

Claims 1 and 35 are amended in a way that operation of the resonator structure is restricted to thickness extensional (TE) wave mode only (see description p. 7, lines 7-9, lines 13-17 and lines 22-25). The difference between thickness extensional and shear horizontal (SH) wave modes is described in the description (p. 7, lines 15-20 and lines 25-27 and p. 19, lines 12-15). The analysis of the examples of resonator structures discussed in the application (Tables 1-3 and corresponding figures) are based on TE wave mode of operation (p. 18, lines 21-22).

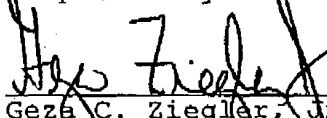
Hirama teaches AT-cut quartz resonators operating in shear horizontal (SH) wave mode (col 5, line 8) where displacement is uniformly distributed in X-direction (col 5, lines 15-16 and col, 4 lines 63-37). Thus, Hirama fails to teach any resonator structures operating in thickness extensional (TE) wave mode. At the time of the invention it was (still is) generally known by a person skilled in the art that thin film resonator structures, that purely operate in shear horizontal (SH) mode disclosed by Hirama in association of AT-cut quartz resonators, will not be able to be manufactured by think film deposition methods.

Thus, there are distinct differences in the arts represented by the reference and the Applicant's invention.

For all of the foregoing reasons, it is respectfully submitted that all of the claims now present in the application are clearly novel and patentable over the prior art of record, and are in proper form for allowance. Accordingly, favorable reconsideration and allowance is respectfully requested. Should any unresolved issues remain, the Examiner is invited to call Applicants' attorney at the telephone number indicated below.

The Commissioner is hereby authorized to charge payment for any fees associated with this communication or credit any over payment to Deposit Account No. 16-1350.

Respectfully submitted,


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26 Jan 2004
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